Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Previously Presented) A vacuum pump comprising:

an inlet port and first and second exhaust ports through which gas from an enclosure connectable to the inlet port can be pumped to said exhaust ports;

a first end, a second end, a third end, and a fourth end of a pump chamber, said first exhaust port is located adjacent said first end, said second exhaust port is located adjacent said second end, said inlet port is located adjacent said third end;

a first and second pair of rotors, said first pair of rotors being mounted on a first shaft extending between said first end and said second end of said pump chamber, said first pair of rotors being spaced apart by a first center shaft between said rotors, said second pair of rotors being mounted on a second shaft extending between said first end and said second end of said chamber, said second pair of rotors being spaced apart by a second center shaft between said rotors;

said rotors each comprise a set of screw threads; and

said first center shaft comprises a first lobe extending from said shaft and a first channel, and said second center shaft comprises a second lobe extending from said shaft and a second channel, wherein said first lobe matingly engages said second channel and said second lobe engages said first channel during rotation of said rotors.

2. (Original) The vacuum pump according to claim 1 wherein said second shaft is parallel to said first shaft.

3. (Original) The vacuum pump according to claim 1 wherein said first and second pairs of rotors each include teeth which mesh together and

move a fixed volume of gas from said inlet port to said first and second exhaust ports.

4. (Original) The vacuum pump according to claim 1 further comprising a third exhaust port located at said fourth end of said pump chamber, and first, second and third exhaust cavities, wherein said first and second exhaust ports are connected via said first and second exhaust cavities to said third exhaust cavity, said third exhaust cavity is connected to said third exhaust port.

5. (Original) The vacuum pump according to claim 1, wherein said lobes are V-shaped.

6. (Original) The vacuum pump according to claim 5, wherein said channels are V-shaped.

7. (Original) The vacuum pump according to claim 1, wherein said lobes are radius-shaped.

8. (Original) The vacuum pump according to claim 7, wherein said channels are radius shaped.

9. (Original) The vacuum pump according to claim 1, wherein said first lobe and said first center shaft are of one piece.

10. (Original) The vacuum pump according to claim 1, wherein said first lobe comprises an insert secured to said first center shaft.

11. (Original) The vacuum pump according to claim 1, wherein said first lobe and said second channel form a first suction section which compresses a volume of gas entering said pump from said inlet port.

12. (Original) The vacuum pump according to claim 11, wherein said first suction section reduces the power consumed to move the volume of gas through the pump chamber and increases pump efficiency.

13. (Original) The vacuum pump according to claim 1, wherein said second lobe and said second center shaft are of one piece.

14. (Original) The vacuum pump according to claim 1, wherein said second lobe comprises an insert secured to said second center shaft.

15. (Original) The vacuum pump according to claim 1, wherein said second lobe and said first channel form a second suction section which compresses a volume of gas entering said pump from said inlet port.

16. (Original) The vacuum pump according to claim 15, wherein said second suction section reduces the power consumed to move the volume of gas through the pump chamber and increases pump efficiency.

17. (Original) A vacuum pump assembly comprising:

a first end and a second end;

an inlet port at a third end and at least one exhaust port at a fourth end;

a first shaft and second shaft parallel to each other extending between said first end and said second end, each shaft comprises a first end and a second end;

a first pair and second pair of rotors, said first pair of rotors being mounted about a diameter of said first shaft, said second pair of rotors being mounted about a diameter of said second shaft;

said first pair of rotors being spaced by a first center shaft and said second pair of rotors being spaced by a second center shaft;

said first center shaft comprises a lobe, and said second center shaft comprises a channel, wherein said lobe and said channel form a suction section.

18. (Original) The vacuum pump according to claim 17, wherein said lobe and said channel matingly engage during rotation of said rotors.

19. (Original) The vacuum pump according to claim 17, wherein said first and second pairs of rotors each comprise a set of screw threads.

20. (Original) The vacuum pump according to claim 17 wherein said first and second pairs of rotors each include teeth which mesh together and move a fixed volume of gas from said inlet port to said first and second exhaust ports.

21. (Original) The vacuum pump according to claim 17, wherein said lobe is V-shaped.

22. (Original) The vacuum pump according to claim 21, wherein said channel is V-shaped.

23. (Original) The vacuum pump according to claim 17, wherein said lobe is radius-shaped.

24. (Original) The vacuum pump according to claim 23, wherein said channel is radius shaped.

25. (Original) The vacuum pump according to claim 17, wherein said lobe and said first center shaft are of one piece.

26. (Original) The vacuum pump according to claim 17, wherein said lobe comprises an insert secured to said first center shaft.

27. (Original) The vacuum pump according to claim 17, wherein said suction section reduces the power consumed to move the volume of gas through the pump chamber and increases pump efficiency.

28. (Withdrawn) A method for reducing power to move a volume of gas through a vacuum pump, the method comprising:

widening a first center gap of a first shaft extending between a first set of rotors in a pump chamber, widening a second center gap of a second shaft extending between a second set of rotors inside pump chamber;

adding a lobe to said first shaft;

milling a channel in said second shaft to matingly engage said lobe; and

forming a suction section by engaging said lobe with said channel.

29. (Withdrawn) The method according to claim 28 further including:

forming said lobe and said channel in the form of V-shaped sections.

30. (Withdrawn) The method according to claim 28 further comprising:

forming said lobe and said channel in the form of radius-shaped sections.

31. (Currently Amended) A vacuum pump comprising:

a pump chamber defining an inlet port and an exhaust port;

a first rotor having a first helical thread extending from adjacent the inlet port to adjacent the exhaust port;

a second rotor having a second helical thread extending from adjacent the inlet port to adjacent the exhaust port, the first and second helical threads interengaging;

a lobe mounted to the first rotor adjacent an inlet port end of the first helical thread and a channel defined in the second rotor adjacent the inlet port end of the second helical thread, said lobe and said channel cooperating to form a suction section adjacent the inlet port <u>which is intermittently closed from the inlet port</u>, the lobe and the channel being different from the first and second helical threads.

32. (Original) The vacuum pump according to claim 31, wherein said lobe and said channel matingly engage during rotation of said rotors.

33. (Previously Presented) The vacuum pump according to claim 39, wherein said first and second rotors each include a set of screw threads.

34. (Previously Presented) The vacuum pump according to claim 41, wherein said first and second rotors each include teeth which mesh together and move a fixed volume of gas from said inlet port to the exhaust port.

35. (Original) The vacuum pump according to claim 31, wherein said lobe is V-shaped.

36. (Original) The vacuum pump according to claim 35, wherein said channel is V-shaped.

37. (Original) The vacuum pump according to claim 31, wherein said lobe is radius-shaped.

38. (Original) The vacuum pump according to claim 37, wherein said channel is radius shaped.

39. (Currently Amended) A vacuum pump <u>for pumping a gas</u> comprising:

a pump chamber defining an inlet port and an exhaust port;

a first rotor and a second rotor, the first and second rotors being mounted adjacent the inlet and exhaust ports;

a lobe mounted to the first rotor adjacent the inlet port and a channel defined in the second rotor adjacent the inlet port, said lobe and said channel cooperating to form a suction section adjacent the inlet port <u>which compresses said gas</u>, said lobe being integral with a first center shaft section.

40. (Currently Amended) A vacuum pump comprising:

a pump chamber defining an inlet port and an exhaust port;

a first rotor and a second rotor, the first and second rotors being mounted adjacent the inlet and exhaust ports;

a non-helical lobe mounted to the first rotor adjacent the inlet port and a channel defined in the second rotor adjacent the inlet port, said lobe and said channel cooperating to form a positive displacement suction section adjacent the inlet port, said lobe comprising an insert secured to a first center shaft section.

41. (Currently Amended) A vacuum pump comprising:

a pump chamber defining an inlet port and an exhaust port;

a first rotor and a second rotor, the first and second rotors being mounted adjacent the inlet and exhaust ports;

a first lobe mounted to the second rotor adjacent the inlet port and a first channel defined in the first rotor adjacent the inlet port, said first lobe and said first channel cooperating to form a first positive displacement suction section adjacent the inlet port; and

a second lobe mounted to the first rotor adjacent the inlet port which second lobe cooperates with a second channel defined in the second rotor to define a second positive displacement suction section adjacent the inlet port, said first lobe being radially offset from said second channel.

42. (Original) The vacuum pump according to claim 31, wherein said suction section reduces the power consumed to move the volume of gas through the pump chamber and increases pump efficiency.

43. (Previously Presented) A vacuum pump comprising:

a pump chamber including an inlet port and a pair of exhaust ports with the inlet port being defined centrally therebetween;

a first rotor and a second rotor, the first and second rotors being mounted adjacent the inlet and one of the exhaust ports;

a lobe mounted to the first rotor adjacent the inlet port and a channel defined in the second rotor adjacent the inlet port, said lobe and said channel cooperating to form a suction section adjacent the inlet port;

a third rotor mounted to an opposite side of the lobe from the first rotor and extending between the lobe and the other of the exhaust ports;

a fourth rotor mounted adjacent the channel opposite to the second rotor, the fourth rotor extending from the channel to the other exhaust port and meshingly engaging with the third rotor.

44. (Original) The vacuum pump according to claim 31, further including:

a manifold connecting the exhaust ports with a high pressure exhaust port.

45. (Currently Amended) A method for reducing power to move a volume of gas through a vacuum pump, the method comprising:

defining a first shaft section disposed in a pump chamber and having a first helical thread extending from adjacent an inlet port to adjacent an exhaust port;

defining a second shaft section disposed in a pump chamber and having a second helical thread extending from adjacent the inlet port to adjacent the exhaust port, the first and second threads intermeshing;

providing a lobe on said first shaft section abutting the inlet port end of the first helical thread <u>said lobe having a constant profile in an axial direction</u>;

defining a channel in said second shaft section thread at the inlet port end of the second helical thread which channel matingly engages said lobe to form a suction section between the rotors and the inlet port.

46. (Original) The method according to claim 45 further including:

forming said lobe and said channel in the form of V-shaped sections.

47. (Original) The method according to claim 45 further including:

forming said lobe and said channel in the form of radius-shaped sections.